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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,261	03/12/2004	Kazumasa Kobayashi	826.1939	5852

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EXAMINER	
PARIHAR, SUCHIN	

ART UNIT	PAPER NUMBER
2825	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,261	KOBAYASHI, KAZUMASA	
	Examiner	Art Unit	
	Suchin Parihar	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/23/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/23/2007 has been entered.

2. Applicant's arguments with respect to claims 1, 9 17 and 19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-19 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Kikuchi et al. (6,385,758) in view of Aubel et al. (US 6,910,200) and in further view of Pierrat (US 2002/0127479).

5. With respect to claim 1, Kikuchi teaches: a storage device to store contour information about each component (i.e. component contour data is used by layout data converter 111 of Figure 3, wherein the contour data originates from the layout data memory unit 20 of Figure 3, Col 8, lines 1-7); an indication device to indicate a plurality of components to be collectively arranged (i.e. to place or arrange the parts or

components, Col 2, lines 45-50) in the electronic circuit and a layout distance between two of the plurality of components (i.e. a positional relationship between components determines a moving distance, Col 4, lines 50-55); a calculation device (layout data converter, Col 7, lines 55-60) to obtain (layout data is supplied to layout data converter, Col 7, lines 55-60) contour information (see contours of Figure 9, prepared by the layout data converter, Col 7, lines 55-60) about the plurality of components (see all components of Figure 9, supplied to the layout data converter) from the storage device (i.e. layout data memory 20 of Figure 3) and to calculate a contour (processing and decomposing component contours and substrate contour lines, Col 7, lines 55-65) of a component region for collectively arranging the plurality of components (i.e. component contours are arranged, Col 8, lines 4-6) using the obtained contour information and the indicated layout distance (i.e. a positional relationship between components determines a moving distance, Col 4, lines 50-55); and a display device to display the calculated contour of the component region on the screen (i.e. layout result display unit 780 may comprise a CRT display, Col 13, lines 55-60).

Kikuchi fails to teach: the layout distance between two of the plurality of components is selectively one of a common distance of all components and a unique distance.

However, Aubel teaches: the layout distance between two of the plurality of components is selectively chosen (circuit designer may specify [i.e. select/selectively choose] a desired amount of spacing [i.e. layout distance] between neighboring cells, Col 6, lines 35-45).

Aubel fails to teach: one of a common distance of all components and a unique distance.

However, Pierrat teaches: one of a common distance of all components and a unique distance (uniform [i.e. common to all] spacing between structures on the device, paragraph [0045]).

It would have been obvious to one of ordinary skill in the art to incorporate Aubel and Pierrat into the invention of Kikuchi for at least the following reason(s):

Aubel improves the invention of Kikuchi by providing a method to organize [or segregate] one or more cells or regions of a layout in order to improve (i.e. transform) the layout or design of each component; and

Pierrat improves the invention of Kikuchi/Aubel by providing method wherein the contours of component regions can be transformed or adjusted using OPC techniques to improve the way the design is patterned onto a wafer which is a desirable attribute in the art (see Pierrat, paragraph [0012]), (also see paragraph [0178], final contours of exposed regions after OPC transformations/adjustments).

6. With respect to claims 9 and 17, Kikuchi teaches: indicating a plurality of components to be collectively arranged (i.e. to place or arrange the parts or components, Col 2, lines 45-50) in the electronic circuit and a layout distance between two of the plurality of components (i.e. a positional relationship between components determines a moving distance, Col 4, lines 50-55); calculating a contour of a component region for collectively arranging the plurality of components (i.e. component contours

are arranged, Col 8, lines 4-6) using contour information (component contours and substrate contour lines, Col 7, lines 55-65) about the plurality of components and the indicated layout distance (i.e. a positional relationship between components determines a moving distance, Col 4, lines 50-55); and displaying the calculated contour of the component region on the screen (i.e. layout result display unit 780 may comprise a CRT display, Col 13, lines 55-60).

Kikuchi fails to teach: the layout distance between two of the plurality of components is selectively one of a common distance of all components and a unique distance.

However, Aubel teaches: the layout distance between two of the plurality of components is selectively chosen (circuit designer may specify [i.e. select/selectively choose] a desired amount of spacing [i.e. layout distance] between neighboring cells, Col 6, lines 35-45).

Aubel fails to teach: one of a common distance of all components and a unique distance.

However, Pierrat teaches: one of a common distance of all components and a unique distance (uniform [i.e. common to all] spacing between structures on the device, paragraph [0045]).

It would have been obvious to one of ordinary skill in the art to incorporate Aubel and Pierrat into the invention of Kikuchi for at least the following reason(s):

Aubel improves the invention of Kikuchi by providing a method to organize [or segregate] one or more cells or regions of a layout in order to improve (i.e. transform) the layout or design of each component; and

Pierrat improves the invention of Kikuchi/Aubel by providing method wherein the contours of component regions can be transformed or adjusted using OPC techniques to improve the way the design is patterned onto a wafer which is a desirable attribute in the art (see Pierrat, paragraph [0012]), (also see paragraph [0178], final contours of exposed regions after OPC transformations/adjustments).

7. With respect to claim 19, Kikuchi teaches:

calculating a contour (processing and decomposing component contours and substrate contour lines, Col 7, lines 55-65) of a component region for collectively arranging the plurality of components (i.e. component contours are arranged, Col 8, lines 4-6) using the obtained contour information and the indicated layout distance (i.e. a positional relationship between components determines a moving distance, Col 4, lines 50-55); and

displaying the calculated contour of the component region on the screen (i.e. layout result display unit 780 may comprise a CRT display, Col 13, lines 55-60).

Kikuchi fails to teach: the layout distance between two of the plurality of components is selectively one of a common distance of all components and a unique distance.

However, Aubel teaches: the layout distance between two of the plurality of components is selectively chosen (circuit designer may specify [i.e. select/selectively choose] a desired amount of spacing [i.e. layout distance] between neighboring cells, Col 6, lines 35-45).

Aubel fails to teach: one of a common distance of all components and a unique distance.

However, Pierrat teaches: one of a common distance of all components and a unique distance (uniform [i.e. common to all] spacing between structures on the device, paragraph [0045]).

It would have been obvious ... (For motivation, see paragraph 5 of this office action, above).

8. With respect to claims 2 and 10, Kikuchi teaches: the indication device indicates a component region to be transformed (i.e. arrangement of the components is uniformly compacted, Col 5, lines 19-25); the calculation device transforms the indicated component region (i.e. compaction is carried out, Col 5, lines 19-25); and the display device displays a transformed component region (i.e. layout result display unit 780).

9. With respect to claims 3 and 11, Kikuchi teaches: the indication device indicates a component region to which attribute information is set (each pair of adjacent components in the layout has constraint data assigned to the pair, Col 5, lines 1-13); and the calculation device sets attribute information about each component included in the indicated component region (i.e. a movable distance for each component is assigned).

10. With respect to claims 4 and 12, Kikuchi teaches: the indication device indicates a plurality of components that are separately arranged in the electronic circuit (i.e. place or arrange parts or components in the layout, Col 2, lines 45-50); and the display device collectively displays the indicated plurality of components as a component region (i.e. layout result display unit 780, Col 13, lines 55-60).

11. With respect to claims 6 and 14, Kikuchi teaches: the indication device indicates a component region to be divided (i.e. a pattern division section for dividing a pattern into a plurality of partial areas, Col 3, lines 43-47); and the calculation device divides the indicated component region into a plurality of component regions (i.e. a pattern division section for dividing a pattern into a plurality of partial areas, Col 3, lines 43-47); and the display device displays the plurality of component regions (i.e. layout result display unit 780, Col 13, lines 55-60).

12. With respect to claims 8 and 16, Kikuchi teaches: the indication device indicates a reference component (i.e. terminal constraint graph prepares a pair of configurations, Col 7, lines 18-23); and the calculation device calculates a contour of the component (i.e. component contours are arranged, Col 8, lines 1-5) region in consideration of relative position relation (i.e. positional relationship between components, Col 4, lines 50-55) between the indicated reference component and the plurality of components.

13. With respect to claim 18, Kikuchi teaches: wherein the component region is determined by type of component (i.e. terminals, wires, Col 8, lines 1-10) and number of components (common component numbers, Col 10, lines 15-25).

14. With respect to claims 5 and 13, Kikuchi teaches: the indication device indicates a component region to be divided (i.e. pattern division section for dividing a substrate into a plurality of partial areas, Col 3, lines 43-47). Kikuchi fails to teach: the display device separately displays at least one indicated component from among a plurality of components included in the indicated component region and collectively displays remaining components as a component region. However, Aubel teaches: the display device separately displays at least one indicated component (i.e. placement tool may load a physical representation of the selected region or cell, Col 19, lines 55-60) from among a plurality of components included in the indicated component region (i.e. selected region, Col 19, line 48) and collectively displays remaining components (i.e. children of the selected region may be displayed, Col 19, line 50) as a component region. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Aubel into the invention of Kikuchi for the following reason(s): Aubel improves the invention of Kikuchi by providing a method to organize [or segregate] one or more cells or regions of a layout in order to improve (i.e. transform) the layout or design of each component.

15. With respect to claims 7 and 15, Aubel teaches: the indication device indicates a plurality of component regions to be integrated (i.e. designer may select an un-placed region or cell and integrate it into the second physical window, Col 19, lines 55-60); the calculation device integrates the indicated plurality of component regions into one component region (i.e. the placement tool may then move the region or cell from the first physical window to the second physical window, wherein said region or cell is

integrated with other cells or regions [i.e. children] that pre-exist in the second physical window, Col 19, lines 45-65); and the display device displays the one component region (i.e. the second physical window displays the integrated one component region in the floor plan window, Col 19, lines 49-52).

Response to Arguments

16. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suchin Parihar whose telephone number is 571-272-6210. The examiner can normally be reached on Mon-Fri, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
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JACK CHIANG
SUPERVISORY PATENT EXAMINER